

DescriptionImproved crown for gas cooker burners

The present patent application for industrial invention refers to an improved crown for gas cooker burners, provided with a reticulation of radial ribs on the lower side, in order to reduce risks of deformation during extraction from the mould and cooling.

- 5 To better understand and appreciate the advantages of the invention, reference is made to the structural geometrical configuration of current models of crowns for gas cooker burners, of which the model of the invention is an evolution capable of eliminating the operations that are necessary today to calibrate the crown after moulding.
- 10 Gas cooker burners basically comprise a lower hollow body, on which a disk with a large annular crown is centred and positioned. The crown features a dense series of radial notches and is covered by a circular plate, known as "cap".
- The body is configured as a chamber and features a central hole on the
- 15 bottom wall for the injector nozzle. The gas comes out of the hole with vertical direction after going through a short horizontal conduit located on the lower section of the body, where the gas feed pipe is inserted.
- The disk with annular crown has a large central hole provided with a collar that surrounds the injector nozzle.
- 20 The disk with annular crown is also provided with peripheral feet used to centre and place the disk in raised position on the border of the chamber.
- This means that an annular slot exists between the annular crown and the body of the burner. External air can flow inside the chamber through the annular slot, because of the depression created by Venturi effect by the gas
- 25 that rises through the collar and spreads inside the cap, until it exits through the annular crown with radial direction. The notches of the annular crown become output nozzles when they are bordered by the cap.

As it is known, when the gas cooker is turned on, a small combustion flame is

created and stabilised in each nozzle from which the air-gas mixture flows.

The description of the structural configuration and the operation mode of ordinary gas cooker burners was necessary to explain the reason why the disk with annular crown, which is normally moulded from a single piece of aluminium, must be calibrated with machine tools in order to make the upper  
5 surface of the notched crown perfectly flat and levelled.

In order for the cap to close the crown notches perfectly, the cap must perfectly adhere along the entire upper border of the crown.

When the disk with annular crown is extracted from the mould, tensions  
10 during cooling can cause deformation that, although very small, cannot be tolerated on the upper border of the crown, whose perfect planarity is absolutely necessary to allow the air-gas mixture from the space limited by the crown and covered by the cap to flow through the series of radial notches only, and not through other spaces that may exist between the cap and the  
15 crown.

For this reason each piece is calibrated to ensure perfect planarity of the upper surface of the notched crown.

The purpose of the present invention is to solve this drawback, by giving a new structural configuration to the disk, with good rigidity, capable of  
20 opposing the tensions occurred during cooling and reducing deformation, thus eliminating the need to calibrate the upper border of the crown.

The disk with crown of the invention is provided with a reticulation of stiffening radial ribs, which extend from the perimeter of the crown to the collar that protrudes in the centre under the disk with crown.

25 Another purpose of the invention is to provide a crown for gas cooker burners that can be positioned safely and steadily to avoid being turned over.

The second purpose has been obtained by providing an additional series of feet in addition to the traditional set of three feet used to centre the disk on the body of the burner.

30 For major clarity the description of the invention continues with reference to the enclosed drawings, which are intended for purpose of illustration only and not in a limiting sense, whereby:

- Fig. 1 is a side view of a traditional burner, partially sectioned with a vertical diametral plane that passes through the axis of the conduit that supplies gas to the injector.

- Fig. 2 is a perspective view of the disk with crown of the invention seen from below to highlight the geometrical configuration of the lower wall.

With reference to Fig. 1, the disk with crown of the invention is used in a traditional burner (1), of the type comprising a hollow body (2) with an internal chamber (3), whose bottom wall features a central hole for the injector nozzle (4), where gas arrives from the conduit (5) externally located on the body (2) and provided with threaded opening (5a) used to insert the gas feed pipe.

The burner (1) is also provided with a disk (6) with a large annular crown (6a) with a dense series of radial notches (6b) covered by a circular cap (7).

The disk (6) is also provided with peripheral feet (6c) used to centre and place the disk (6) in raised position on the border of the chamber (3); for this reason an annular slot (8) exists between the annular crown (6a) and the body (2) of the burner, through which external air can flow inside the chamber (3).

The disk (6) has a central hole (9) limited by a collar (10) above the injector (4).

The present invention refers to the structural configuration of the lower wall of the wall (6) with notched crown (6a).

With reference to Fig. 2, the disk (6) has a reticulation of stiffening radial ribs (11), which extend from the perimeter of the crown (6a) to the collar (10) that limits the hole (9).

The rigidity of the disk (6) is improved by means of an annular rib (12) near the perimeter of the crown (6), which intersects the series of radial ribs (11) and features an annular groove (not shown in Fig. 2) on the upper surface of the disk (6).

Experimental tests performed by the applicant have shown that the reticulation of ribs (11 and 12) on the lower side of the disk (6) provides sufficient rigidity to the disk (6) to eliminate the deformation that occurs during shrinkage and impairs the planarity of the lower border of the crown (6a), thus requiring calibration with machine tools.

To ensure the stable position of the disk (6), three feet (13) have been added to the traditional set of three feet (6c) of the disk (6) on the body of the burner.

### **Claims**

1. Crown for gas cooker burners, of the type made of one piece of moulded aluminium, composed of a disk (6) with three feet used to place and centre the disk (6) on the body (2) of the burner and having a central hole (9) and a large annular crown (6a) provided with a dense series of radial notches (6b), characterised by the fact that the disk (6) has a reticulation of stiffening radial ribs (11), which extend from the perimeter of the crown (6a) to the collar (10) that limits the hole (9), and by the fact that it has an annular rib (12) near the perimeter of the crown (6), which intersects the series of radial ribs (11) and features an annular groove on the upper surface of the disk (6).
2. Crown for gas cooker burners, as defined in the preceding claim, characterised by the fact that the disk (6) is provided with three feet (13) in addition to the traditional set of three feet (6c) of the disk (6) on the body (2) of the burner.

**Improved crown for gas cooker burners**

**Abstract of the Disclosure**

The present invention refers to an improved crown for gas cooker burners, provided with a reticulation of stiffening ribs on the lower side, in order to reduce the risk of deformation during extraction from the mould and cooling.

